

REMARKS

The final Office action mailed on 2 June 2004 (Paper No. 20040531) has been carefully considered. Allowance of claims 5 thru 7, 11, 12, 14 thru 17, 19 and 22 as indicated in paragraph 5 of the final Office action is appreciated.

The specification is being amended to correct minor errors and improve grammatical form. Claims 20 and 23 are being canceled without prejudice or disclaimer, and claims 1, 5, 11, 13, 14, 15, 18, 19 and 22 are being amended. Thus, claims 1 thru 19 and 22 are pending in the application.

It should be noted that allowed independent claims 5, 11, 14, 19 and 22 are being amended merely for the purpose of improving their form. For example, each of these claims is being amended to add the words "vertically elongated" or "elongated" to the expression "first indented portion" so that the resulting terminology ("first vertically elongated indented portion" or "first elongated indented portion") is consistent with the expression of that term appearing earlier in the particular claim.

Another change involves the insertion of the word "electron" before "gun" in the preamble of certain claims, this amendment being merely for the purpose of consistency with the recitation of "electron gun" earlier in the preamble of the particular claim.

Finally, the deletion of the word “being” before the word “installed” is being made merely for the purpose of improving grammatical form.

Thus, these changes should not affect the allowance of independent claims 5, 11, 14, 19 and 22, and the Amendment After Final should be entered because it does not raise new issues requiring further consideration or search.

With respect to independent claims 1 and 18, those claims are being additionally amended to recite that the “plurality of focusing electrodes” includes “a final acceleration electrode forming a main lens of the electron gun”. Whereas this is a new limitation to the claim, it is not a new limitation to the application or to the claims in general. For example, original dependent claim 15 contained the recitation “further comprising a final acceleration electrode being installed adjacent to said fifth focusing electrode, said final acceleration electrode forming a main lens”. Thus, this recitation is not new to the application, and presumably the recited feature has been fully considered and searched by the Examiner previously. Therefore, the addition of the aforementioned recitation to independent claims 1 and 18 should not raise new issues requiring further consideration and/or search by the Examiner and, on that basis, this Amendment After Final should be entered.

In paragraph 2 of the Office action, the Examiner rejected claims 1, 2, 8 thru 10,

13, 18 and 20 and 23 under 35 U.S.C. §102 for alleged anticipation by Ashizaki, U.S. Patent No. 5,128,586. In paragraph 4 of the Office action, the Examiner rejected claims 3 and 4 under 35 U.S.C. §103 for alleged unpatentability over Ashizaki '586. For the reasons stated below, it is submitted that the invention recited in the claims, as now amended, is distinguishable from the prior art cited by the Examiner so as to preclude rejection under 35 U.S.C. §102 or §103.

As mentioned above, independent claims 1 and 18 are being amended to add the recitation that the plurality of focusing electrodes includes a final acceleration electrode forming a main lens of the electron gun. It is respectfully submitted that this recitation distinguishes the invention of claims 1 and 18 from the prior art cited by the Examiner.

In particular, Ashizaki *et al.* '586 discloses (in Figure 1) cathodes 1a-1c and (in Figure 4) cathode K which emit electron beams toward a control grid 2 or G1, the grid 2 having openings formed therein. The electron beams, after passing through the control grid 2 or G1, encounter an acceleration grid 3 or G2. The Examiner has cited accelerating grid G2 as corresponding to the "screen electrode" recited in the claims. After passing through the acceleration grid 3 or G2, the electron beams encounter the focus grid 4 or G3, and grid 4 has three sections 6 separated by metal plates 7a and 7b. After passing through the focus grid 4, the electron beams encounter the anode 5 which also has three sections 8 separated by metal plates 9a and 9b.

It is submitted that the invention recited in independent claims 1 and 18 is distinguishable from Ashizaki *et al.* '586 because, contrary to the previous analysis by the Examiner, the following correspondence exists between the recited elements of claims 1 and 18, on the one hand, and the elements disclosed in Figure 1 of Ashizaki *et al.* '586:

Claimed Elements	Elements in the Cited Reference
cathode	cathodes 1a-1c or K
control electrode	control grid 2 or G1
screen electrode	none shown
focusing electrodes	acceleration grid 3 or G2 and focus grid 4 or G3
final acceleration electrode	acceleration grid 3 or G2

Alternatively, if the Examiner determines that his previous analysis should be maintained, then the correspondence between the recited elements and the disclosed elements would be as follows:

Claimed Elements	Elements in the Cited Reference
cathode	cathodes 1a-1c or K
control electrode	control grid 2 or G1
screen electrode	acceleration grid 3 or G2
focusing electrodes	focus grid 4 or G3
final acceleration electrode	none shown

Therefore, it can be seen that, under either analysis of the recited elements as compared to the disclosed elements, either the screen electrode recited in claims 1 and 18 is not disclosed in the cited patent, or the final acceleration electrode is not disclosed therein. This omission of a very key element recited in claims 1 and 18 clearly renders a rejection under 35 U.S.C. §102 for direct anticipation improper. Since the arrangement of Ashizaki *et al.* '586 does not at all suggest the inclusion of a screen electrode or a final acceleration electrode under either of the two analyses set forth in tabular form above, a rejection under 35 U.S.C. §103 for alleged obviousness is also improper.

Turning to consideration of independent claim 13, it is submitted that the invention recited in claim 13 is distinguishable from the cited prior art so as to preclude rejection under 35 U.S.C. §102 or §103.

Specifically, independent claim 13 recites “a plurality of focusing electrodes forming a plurality of quadrupole lenses” (quoting from the last paragraph of claim 13). In the final Office action (the bottom of page 2), the Examiner merely stated that “the focusing electrode form a plurality of quadrupole lenses (Fig. 1)” (quoting from the last line on page 2 of the final Office action). However, a review of Figure 1 and Figure 4 of the cited patent, and of the corresponding description in the specification of the patent, fails to reveal any disclosure or suggestion that the focus grid 4 of Figure 1 or G3 of Figure 4 of the cited patent forms “a plurality of quadrupole lenses” as recited in claim

13.


In the latter regard, it is noted that the patent states (at column 2, lines 58-60) that the control grid 2 is provided with metal plates 10 on its inside surface so as to form a "quadrupole structure". However, this does not constitute a disclosure or suggestion that the focus grid 4 also forms a quadrupole structure, and it definitely does not provide a disclosure or suggestion that the focus grid 4 contains focusing electrodes which form a plurality of quadrupole lenses, as recited in claim 13.

For this reason, it is submitted that independent claim 13 recites the invention in a manner distinguishable from the prior art so as to preclude rejection under 35 U.S. §102 or §103.

In view of the above, it is submitted that the claims of this application are in condition for allowance, and early issuance thereof is solicited. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

No fee is incurred by this Amendment After Final.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "R. E. Bushnell", written over a horizontal line.

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